Creating Accessible Documents with Microsoft PowerPoint 2010

Produced By:
VHA Section 508 Office

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Introduction

Background

Section 508 of the Rehabilitation Act requires Federal agencies to make electronic and information technology (E&IT) accessible to users with disabilities, including those with:

- Blindness, color blindness, visual impairment
- Deafness, hearing impairment
- Speech impairment
- Mobility, strength, dexterity or reach impairment

The law includes standards for software applications, operating systems (OS), web-based applications, multimedia and documentation. These standards apply to files made available in PowerPoint documents. With Microsoft PowerPoint 2010, a user can customize the ribbon adding frequently used commands to a tab or group. PowerPoint 2010 enables protected view that prevents files from potentially unsafe locations by disabling editing functions.

Individuals involved in the design, distribution and use of documents are responsible for ensuring that those documents comply with Section 508, but it may not always be clear how to accomplish that. These tutorials will review the features of PowerPoint 2010 that can improve the accessibility of a document and provide the steps for using those features.

Purpose

The goal of these tutorials is to enable VA personnel to produce and distribute accessible PowerPoint documents by using the principles of accessibility that will ensure materials are Section 508-compliant; regardless of whether the documents are used for official communication, eLearning course content components or other purposes.

These tutorials reference commercial products likely to be familiar to those taking the course. References to commercial product functionality and providers are included to illustrate application of techniques described, and not intended as either endorsements or critiques of specific providers or products. These tutorials specifically describe steps for using Microsoft Office PowerPoint 2010 for Windows, but the concepts found in these tutorials can and should be applied to all brand and document types.

How to Use These Tutorials

The tutorials are designed so you can navigate through them using the Next and Previous arrow links located at the top and bottom of each page; or, you may jump to a topic of particular interest using the links in the left-hand navigation sidebar. The entire set of tutorials may be printed by selecting the link at the bottom of the sidebar.

Several of the tutorials include videos which provide additional information and examples. To play a video, select its link in the navigation bar. Wait for the video to load and then press the Play button.

Reading Order

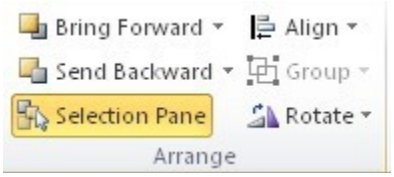
Order of Content

By default, the reading order of a slide is the order in which objects are added. As you add and remove objects such as content placeholders, graphics and WordArt on a slide, PowerPoint keeps track of the order in which they are layered. This order is called the "Z-order". The Z-order is the order of layers from back to front on the slide with the object furthest back having the lowest Z-order. The item having the lowest Z-order (i.e. number 1) is the first item encountered by assistive technology. When reading order is set correctly, people using assistive technology can read the information on a slide in the order in which it is meant to be read. Screen readers may have difficulty identifying complex layouts in the proper sequence if the reading order is not correct, and the meaning and relationship of the content may not be easily understood by users of assistive technology.

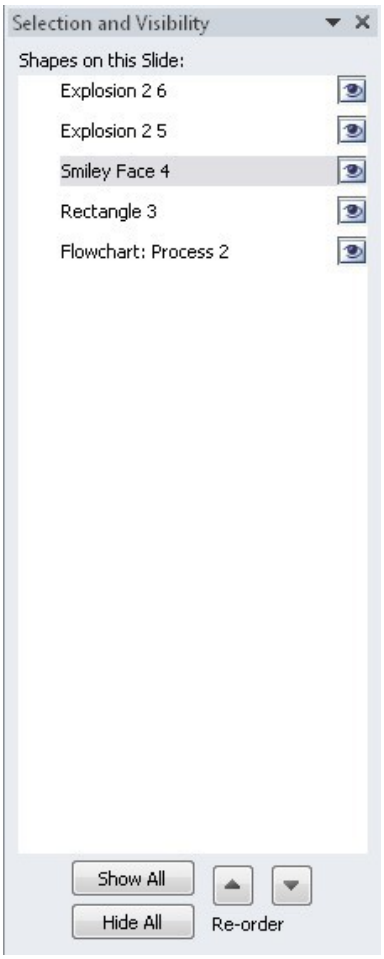
Authors should use the Selection Pane option under the Format ribbon to visually see and arrange the order of images, placeholders, WordArt and other content. Use the selection pane to arrange the content of the slide to match the visual reading order of the slide (top to bottom, left to right, or the order in which the content is intended to be read). Some types of screen readers use the back to front (Z-order) to determine how to read the content on the slide; therefore, the first item read will be the bottom (last) item listed in the selection pane. However, other screen readers use the X, Y coordinates of the objects on the slide, reading objects from left-to-right, top-to-bottom based on the precise location of the top left corner of each object's border, not the location of text or graphic content contained in the object. Still other screen readers do not currently support PowerPoint at all. To make sure that the largest number of screen reader users can read PowerPoint slides, both the Z-Order and horizontal and vertical alignments will need to be set properly.

Setting the Reading Order

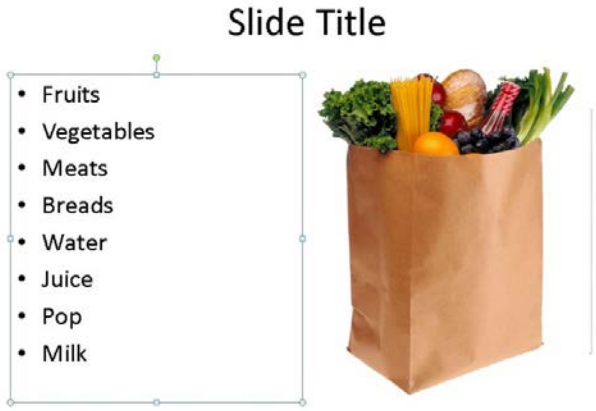
1. Navigate to the toolbar and select the Format tab.
2. Locate the Arrange pane.
3. Select the Selection Pane button.



4. Use the Re-order buttons to set the reading order from bottom (read first) to top (read last).

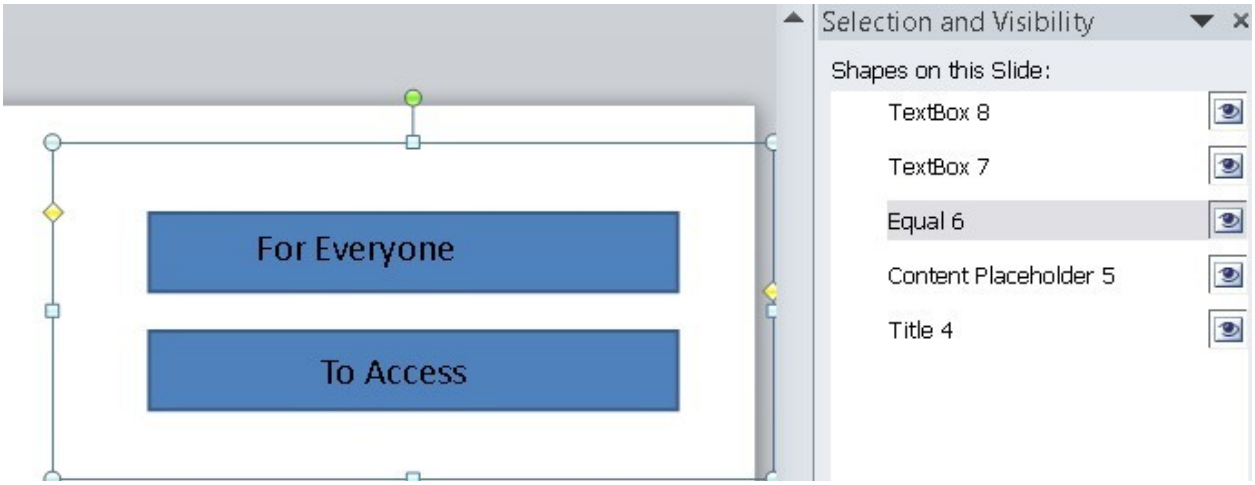


The tab order also indicates the order in which content will be read. The tab order is the order of the items encountered when the TAB key is pressed while in the editing area of PowerPoint. To check the tab order, click the very top left corner of the slide with the mouse and then press TAB on the keyboard to see a dotted rectangle around the first item in the tab order. Each time the tab key is pressed another item on the slide will become highlighted with the dotted rectangle. The order in which the items are highlighted is the order in which content will be read by assistive technology. This order should be the same as the reading order. Use the steps above and the selection pane to compare the tab order and the reading order of each slide.



Shapes and Text Boxes

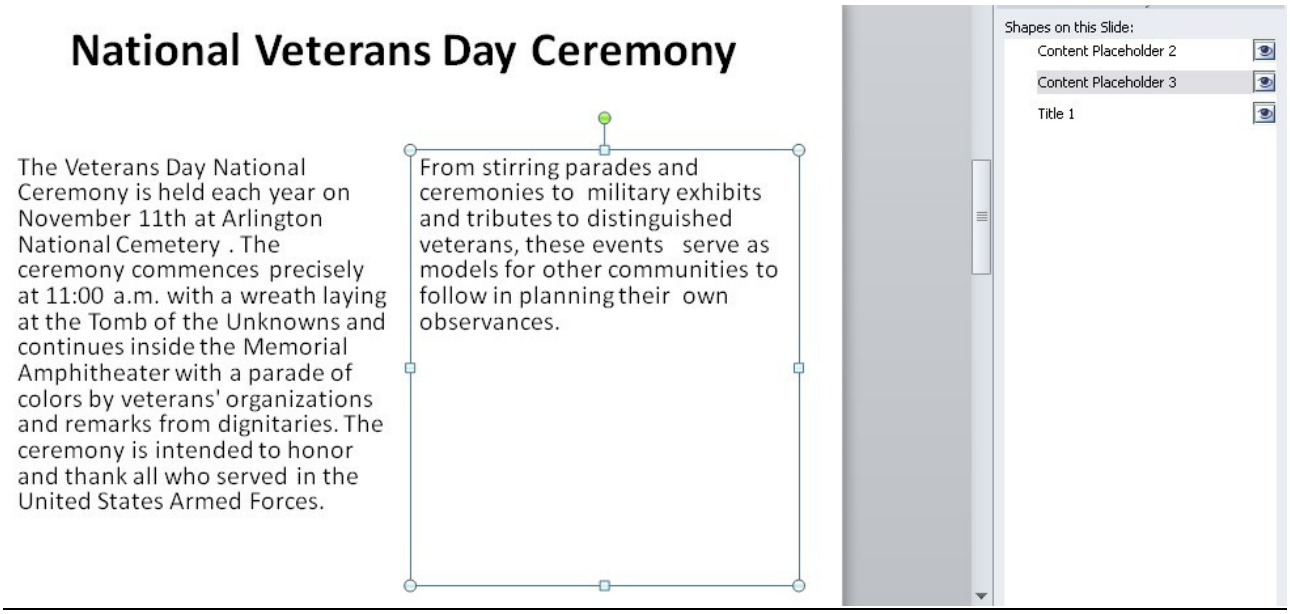
Although an author can insert many types of content from the insert ribbon, some will not be accessible to users of assistive technology. Even though content such as shapes provide the option to apply alternate text and the shapes appear in the selection pane, assistive technology software does not recognize this content. On the other hand, content inside an inserted text box can be read by users of assistive technology. The picture below shows an equal sign shape with text boxes placed on top of the shape. It is not shown but alternate text was also applied to the equal sign shape. The selection pane is open and the equal shape is highlighted in the selection pane. When the screen reader encounters this slide though, what is read is the title of the slide, the contents of the placeholder and the two text boxes on top of the shape. The alternate text on the shape is never spoken. It is best to avoid using shapes and SmartArt in PowerPoint. It is appropriate to insert text boxes and WordArt.



Columns

Multi-column content needs to be positioned properly for it to be read in the correct order. Slide content is read in the order in which it was added to the slide. If elements are added later, they need to be placed first in the reading order for the content to make the most sense. It is critical that the flow of the text makes sense. If columns are not positioned correctly, the text on the slide will be read out of order. By defining the reading order for all slide objects in a PowerPoint presentation and ensuring those elements are ordered properly, screen reading software can detect the correct reading order and provide the content to the user appropriately.

In the example below there are two placeholders next to each other. The first sentence of the container on the left is “The Veterans Day National Ceremony is held each year on . . .” and the first sentence of the container on the right is “From stirring parades and ceremonies to military exhibits . . .” If the second column of text was placed on the slide first, screen reading software would read the content of the second column first, making the information confusing.



It is important to use the built-in column options in PowerPoint so that columns are properly formed. There are two ways to provide multiple columns in a PowerPoint presentation. The slide layout can be changed to multi-column with multiple placeholders for each column or a placeholder can be set to display multiple columns. Using blank spaces, tabs or graphical effects to represent columns will cause content to not be read properly.

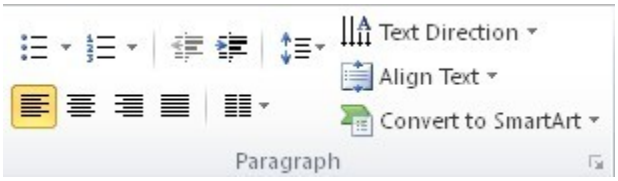
Correct Layout Scheme:

1. Navigate to the toolbar and select Home tab.
2. Locate the Slides pane.
3. Activate the Layout button.

4. Select "Title and Text" or "Title and 2-Column Text" depending on the number of columns required.

To add or edit columns to a placeholder:

1. Select the text where columns need to be applied.
2. Navigate to the toolbar and select the Home tab.
3. Locate the Paragraph pane.



4. Activate the Columns button
   a) Select the desired number of columns from available choices, or;
   b) Select More Columns from the list to open the Columns dialog.
5. Choose the desired options.
6. Verify the column changes have been applied.

Hidden Content

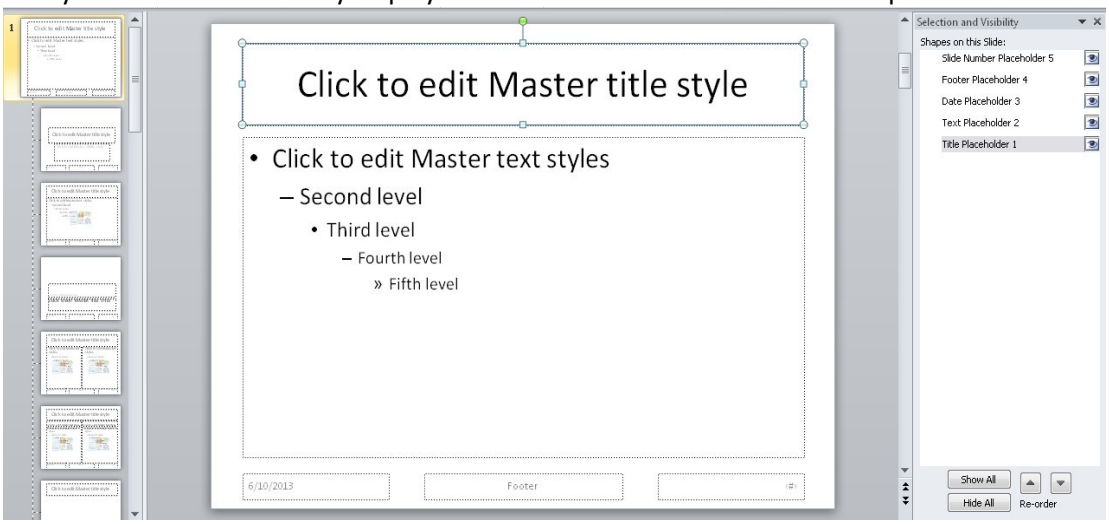
Content can be hidden and out of view during a presentation if it is placed behind other objects or off the edge of the slide. Even though it is meant to be hidden, assistive technology such as screen readers may announce this content to the user unless it is hidden via the master slide or removed from the slide area. Most current assistive technologies will not detect the content presented through the master slide. Having the wrong content announced can lead to confusion and misunderstanding. .

The slide master view will show the items that will be hidden from most users of assistive technology on each slide throughout the presentation.

View the slide master:

1. Navigate to the toolbar and select the View tab.
2. Locate the Master Views pane.
3. Activate the Slide Master

4. Navigate to the toolbar and select the Format tab.
5. Locate the Arrange Pane.
6. Activate the Selection pane
7. Verify all the content visually displayed on the slide matches the selection pane.



Hidden content on individual slides

The selection pane can be used to see what content on individual slides will be conveyed to users of assistive technology. To view content that may be hidden in the Z-order behind other content such as duplicate text or images, use the selection pane available within the Arrange group under the Format tab on the ribbon. The tab order can also be used to look for content that is not visible. Observe the margins of each slide to locate items exposed to assistive technology that is not directly within the slide area.

Images

Non-text elements appear in many ways in a PowerPoint presentation. Examples of these elements are photos, clip arts, diagrams, charts, audio cues or other forms of content that are not expressed explicitly through actual text on the screen. In order for assistive technology users to understand images, the content needs to be provided in an alternative manner. Without alternatives users may not know the item exists and may miss vital content of a presentation.

Alternate Text

All images in a PowerPoint presentation that convey meaning need to have alternate text applied so the purpose being communicated is conveyed to users of assistive technology. Consider the following when creating alternate text:

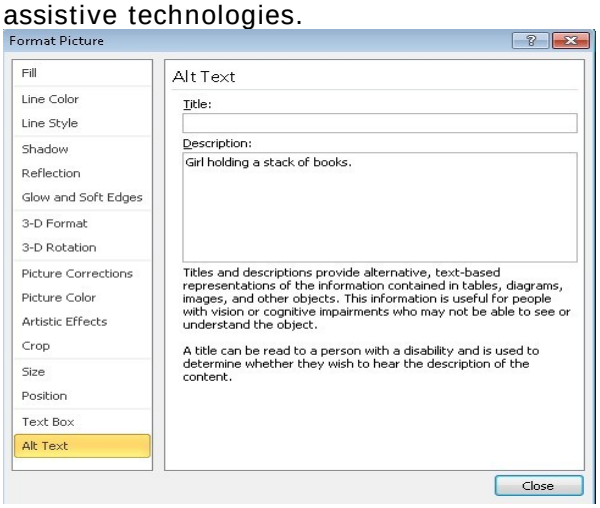
- The textual descriptions need to be short and concise while still being meaningful and informative. For example, “Boarded up house” conveys more meaning than “house” if the purpose of the image is to demonstrate a technique to use during a severe storm.
- The alternate text should stand alone and act as an equivalent for the image if the image were removed.
- Text should not include the words “picture of” or “image of” unless it is significant to point out a particular type of image such as a photograph, painting, or chart.

Alternate text should not include visual details that are only decorative and do not convey meaning. Alternative text is not required if the text in the body of the slide fully describes the image. If an image is decorative or described elsewhere, an empty space should be entered into the alternate text description field.

To add alternate text:

1. Select the image
2. Activate the context menu or press SHIFT+F10
3. Select ”Format Picture”
4. Confirm the “Format Picture” dialog appears
5. Select the Alt Text tab from the options on the left
6. Enter appropriate alternate text for the image in the Description field.
   Note: Do not place alternate text in the Title field. The Title field is not read by

assistive technologies.



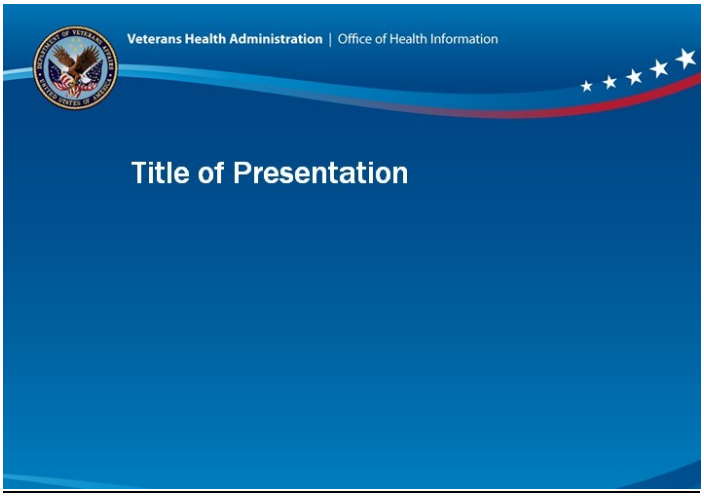
7. Navigate to and activate the Close button
8. Confirm the alternate has been applied by hearing it spoken by AT or navigate back to the Format Picture options and confirm the text is visible on the Alt Text screen.

Background Images

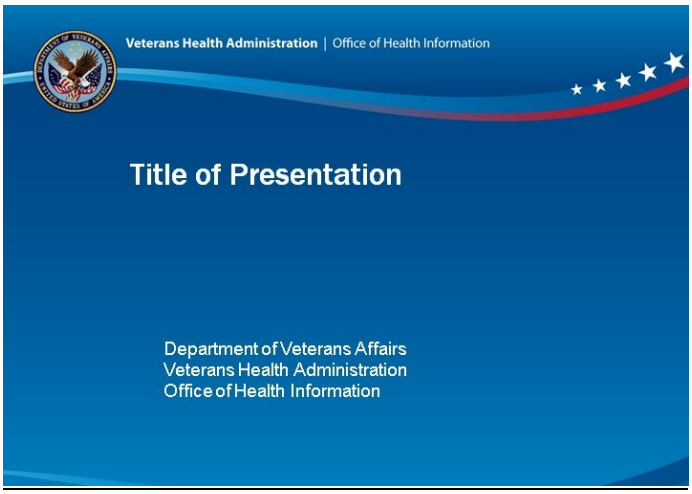
In PowerPoint presentations it is likely that background images and content are part of the master slide. The master slide is a function of PowerPoint that allows the same look and feel of a presentation to extend throughout the presentation. Master slide content that conveys meaning must be conveyed to the user in an accessible manner on each slide. This content may refer to logos or text, such as a revision date. A substitute image must be created to provide alternate text for a background image. An invisible spacer image with appropriate alternate text can serve as a substitute image that resides on a slide in the presentation. Actual text on the slide can also be used to provide an alternative. As long as the alternatives are placed on a main slide in the presentation, not the master slide, the alternate solution will be readable by users of assistive technology. Alternatives only need to be provided for background images when it is not decorative. It is only necessary to expose repetitive content, such as footer information, on the first slide in the presentation deck.

Example of Background Image

Poor Example:



Good Example:

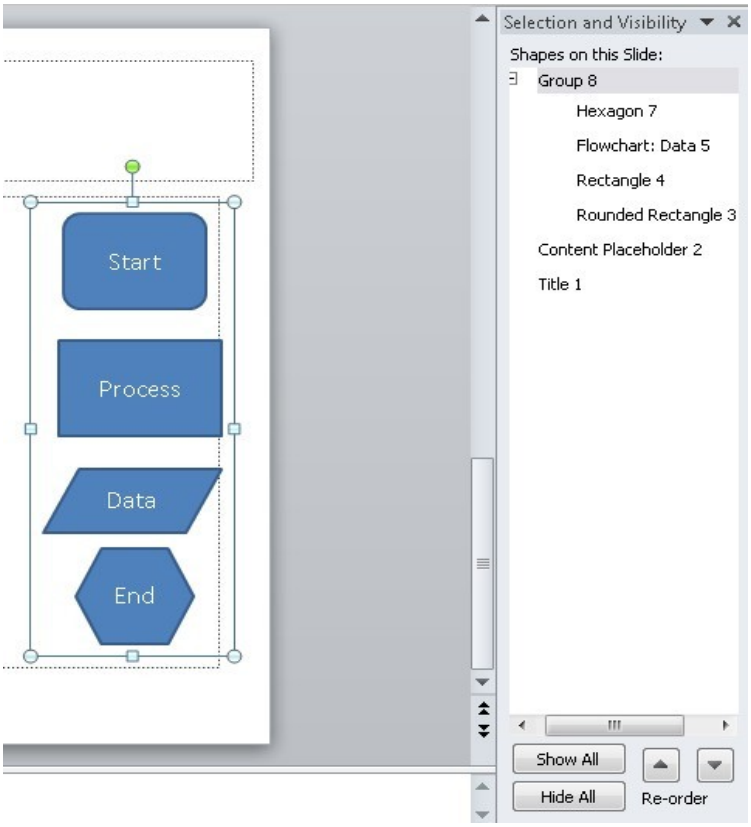


Complex Graphics

Alternate text is not the best place to describe graphs, charts and diagrams. It is difficult for assistive technology users to correlate the relationship of data through alternate text. Users are not able to review the content in a meaningful way. Complex graphics should be described in the body of a slide, in the notes section, or on an appendix slide. However, it is important that alternate text is applied to a chart or graph to describe the overall purpose of the figure. Additionally, the alternate text needs to indicate where the longer description of the graphic is located. An example of alternate text for a graphic that is described in detail elsewhere is “Bar chart showing a $200,000 increase in funding year-over-year from 1998-2006. Yearly numbers provided in the notes.” The description of the content depends on the purpose of the presentation. If it is not necessary for the user to know individual numbers, then a summary of what the chart represents without a longer description would be sufficient.

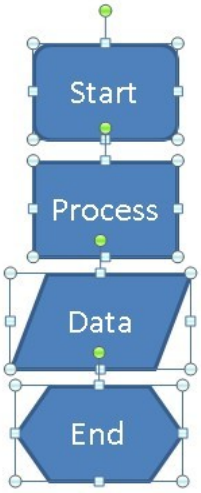
Grouping Objects

Alternate text applied to most objects in PowerPoint, such as shapes, cannot be interpreted by assistive technologies. In order for assistive technology users to understand the flow of information the individual items need to be grouped and then have alternate text applied to the parent object. When the items are grouped the assistive technology treats the entire group as an image; therefore, the alternate text will be read by assistive technology. The alternate text of the group needs to accurately describe the group, order and relationship of the objects in the group. The same principles that apply to complex images likely apply to grouped objects as well. Alternate text and detailed descriptions need to be used accordingly.

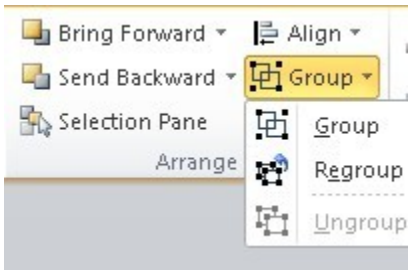


To Group Objects:

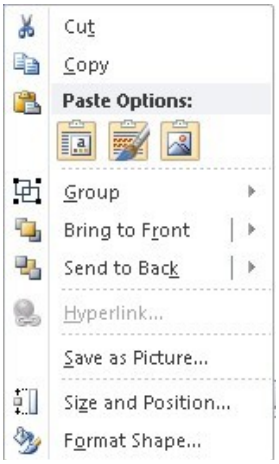
1. Select the objects you wish to group together



2. Activate the context menu and select the Group option or;
    a. Navigate to the toolbar and activate the Format tab
    b. Select the Group button



3. Select the Grouped Object (There should be one focus rectangle around the entire figure).
4. Activate the context menu
5. Navigate to and select Format Shape



6. Navigate to and select the Alt Text tab
7. Enter alternate text describing the grouped objects in the Description field
8. Navigate to and activate the Close button
9. Confirm the alternate has been applied by hearing it spoken by AT or navigate back to the Format Picture options and confirm the text is visible on the Alt Text screen.

Use of Color

Color is important to any design. It helps with drawing attention, enhancing an experience and conveying valuable characteristics. Using color can make content easier to read and understand. As designers and document authors continue to use color in products, it is important to keep accessibility in mind. There are two main concepts to consider when applying color. The first is to provide sufficient contrast between foreground and background colors of text and images. A stark contrast between colors makes text and images of text easier to read. A user should not struggle to see the content due to lack of contrast. Another important concept is to avoid using color by itself to convey meaning. Anytime color is used for emphasis, an additional form of textual representation needs to also be provided. These concepts will be discussed in more detail in this tutorial.

Providing Contrast between Colors

Providing sufficient color between foreground and background is important to many users, especially those with low vision and color blindness. Information may be misinterpreted when the color contrast is not sufficient for users to accurately read the content. Plenty of contrast needs to be present between foreground and background colors. If multiple colors are used in either the foreground or background, the opposite layer needs to provide contrast to all the colors that are used.

There must be enhanced contrast between the foreground text and background colors, and images of text. This requirement applies to text over solid backgrounds, decorative backgrounds and images that contain text. Many color contrast analyzer tools are available to test contrast ratios. A list of these tools is available under the heading “Color Resources” on the VHA Section 508 Resources page. The standard contrast ratio for regular text less than 18 point or bolded text less than 14 point is 4.5:1 or more. For regular text 18 point or larger or bolded text 14 point or larger if bolded, the contrast ratio must be 3.0:1 or higher.

It is best to avoid using busy background images behind text. When there is less conflicting content it is easier to achieve appropriate contrast levels. When complex background images, watermarks or colors must be used, provide a halo of sufficient size around the text to provide contrast for the foreground text color. A halo refers to a ring of color around the image. It appears as though the image is glowing. A glow effect can be set on an image by activating the format picture option and selecting “Glow and Soft Edges” from the left navigation area.

Note: Text or images of text that are part of inactive user interface elements, part of a logo or brand name, are purely decorative, provide content that is not visible to anyone, or are part of a picture that does not contain significant visual content, are not required to meet specific color contrast ratios.

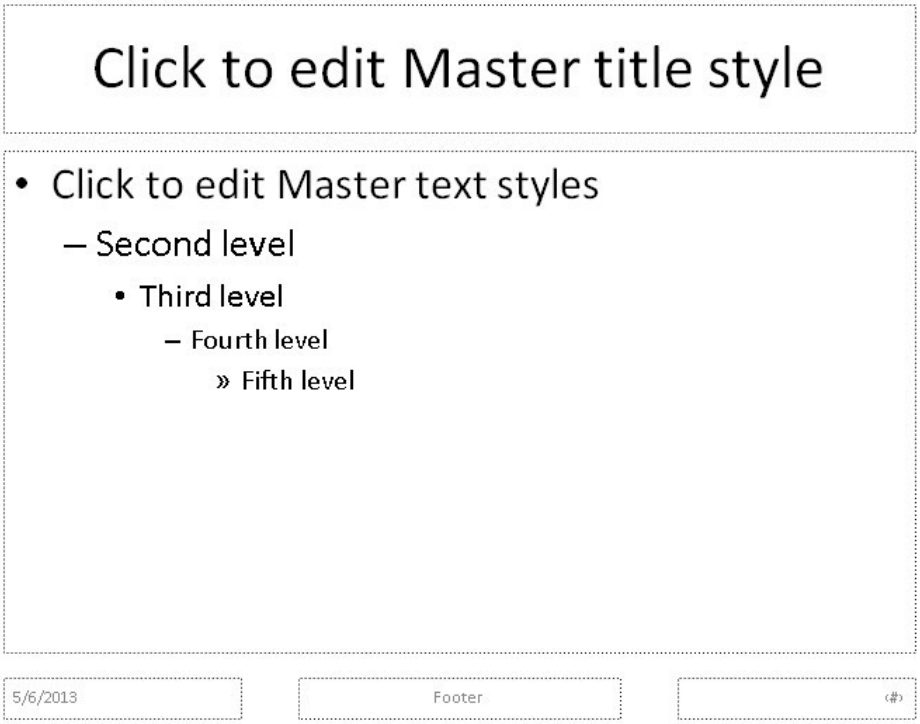
The Master slide should be utilized to apply universal changes to color, font, headings, footers and images to all slides in a presentation. Making changes to the slide master has a global effect on all subsequent slides. However, it is important to note that changes will not apply to individual slides that were created prior to making changes to the master slide. Therefore, it is important to make any global

font changes to the slide master before creating any other slides in your presentation. Any font style/color changes that you make to the master slide can be overwritten on any individual slide.

Steps to Create a Master Slide

1. Open a blank presentation.
2. Navigate to, and activate the View tab on the toolbar.
3. Locate the Master Views pane.

4. Select Slide Master.
5. Make any changes to color, font, clip art, etc.



6. Activate the Close the Master View option after all changes have been applied.
7. Confirm the changes made have been applied to the slides in the presentation.

Examples of Contrast

Poor Contrast:

Example 1 – White text on a light orange background.

This is an example of insufficient color/contrast between background and foreground color selection.

Example 2 – Hanging ornament outline in light gray on a gray background that is only a couple shades darker than the shape.

Example 3 – Graphic with three depictions in a circle (black and white swirls, an earth and a camera on a tripod) that have black edges that blend into the black background.

Good Contrast:

Example 1 – Navy blue text on a light blue background.

This is an example of sufficient color/contrast between background and foreground color selection.

Example 2 – Dark gray hanging ornament on a light gray background.

Example 3 - Graphic with three depictions in a circle (black and white swirls, an earth and a camera on a tripod) that has a white glow or halo around the edge of the circle to make it stand out from the background.

Steps to Change Color

Changing the Text Color:

1. Select the text where the color needs to be changed.
2. Navigate to, and activate the Home tab on the toolbar.
3. Locate the Font pane.
4. Locate and activate the Font Color menu option.
5. Select a desired color.
6. Verify the color of the text has been changed.

Changing the Background of the Document:

1. Locate and activate the Design tab along the toolbar.
2. Locate the Themes pane.
3. Select a Built-In Theme.
4. Activate the Theme Colors menu option.
5. Select a Built-In theme color, or select the Create New Theme Colors option.
6. Verify the background color of the document has changed.

Authors should take care to apply background colors and patterns that work with all the text in their presentation. If options from the Format Background dialog, found by activating the context menu of a slide, are used such as Gradient Fill the text colors on the slide need to have high contrast ratios against each portion of the gradient.

Helpful Hints about Applying Text Effects:

- On the Format tab, in the WordArt Styles pane there is a Text Effects menu option that will allow outlines, shadows, gradient color fills, reflections and glows to be applied to text. Authors need to take time to experiment with the options to produce an effect that will provide optimal contrast.

Avoiding the Use of Color to Convey Meaning

There are many common examples of color being used to convey meaning, but there are appropriate alternatives to all of them. Authors should apply these examples to content and avoid using color to distinguish information that is not conveyed in an alternative format.

When color is used within images to convey meaning, alternative text must be provided. For example, a weather map or a map of regions needs to have meaningful alternative text that supplies the areas included in each alert or section of the map. If a building layout image uses color to indicate areas in which the public is allowed; this type of information would need to be included in the alternative text of the image. Please refer to the Images tutorial for more information on adding alternative text.

When colors are used as the sole method for identifying screen content or controls, persons who are blind, color blind or have low vision may not be able to obtain the same information or may not be able to fully complete a task. Often important text or instructions are called out visually by being placed in colored boxes or text is bolded to create emphasis or importance. These significant pieces of text need to have a textual word or symbol placed before them to ensure assistive technology users can also identify important information. “Note”, “Important”, or “*” are common phrases and symbols that proceed special content. Information communicated via color needs to be available through some method of textual representation, such as text labels or symbols.

The context of the content must be taken into consideration when adding this information. For instance, it is not necessary to add textual meaning before one bolded word in a sentence. Often words such as “not” are bolded and capitalized in the middle of a sentence. In most circumstances, it is not necessary to textually convey the fact that that one word is emphasized.

Examples of Information Conveyed Through Color

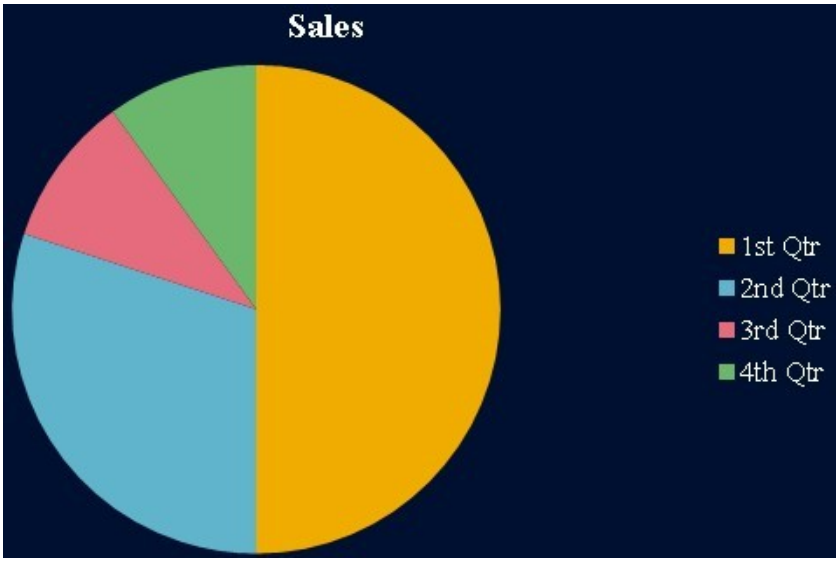
Poor Examples:

Example 1 – The qualifying factors of the following paragraph are highlighted in yellow.

VA provides a wide range of benefits including, Disability, Education and Training, Vocational Rehabilitation and Employment, Home Loan Guaranty, Dependent and Survivor Benefits, Medical Treatment, Life Insurance and Burial Benefits.

You may be eligible for VA benefits if you are a Veteran, Veteran's dependent, surviving spouse, child or parent of a deceased Veteran, Uniformed service member, present or former reservist or National Guard member.

Example 2 - Color is used to convey proportions of a pie chart:



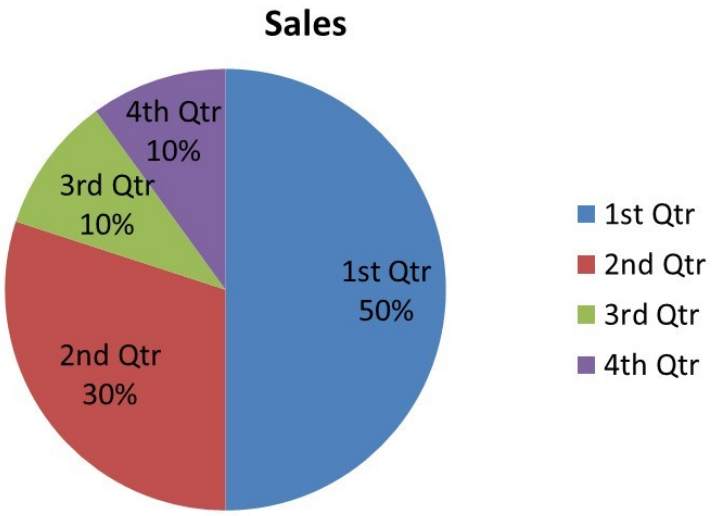
Good Examples:

Example 1 – The word “Important” is added before the highlighted paragraph.

VA provides a wide range of benefits including, Disability, Education and Training, Vocational Rehabilitation and Employment, Home Loan Guaranty, Dependent and Survivor Benefits, Medical Treatment, Life Insurance and Burial Benefits.

Important: You may be eligible for VA benefits if you are a Veteran, Veteran's dependent, surviving spouse, child or parent of a deceased Veteran, Uniformed service member, present or former reservist or National Guard member.

Example 2 - Text numbers are provided within each colored region to represent the information:



Special Note: Now that textual numbers represent the portions on top of the colored slices, the contrast of the text over the background needs to be considered. It is possible to change the color of the text and/or background portion in PowerPoint. To change the color of the text or a chart background follow the steps below.

1. Activate the context menu of one of the slices or bars
2. Navigate to and select the Format Data Series menu option.
3. Confirm the Format Data Series dialog appears.
4. Locate and select Fill from the options in the dialog.
5. Note that the Automatic radio button is selected. There are a few options available; however, it is recommended Solid fill be used. This option will allow only one color in the background versus dealing with multiple shades. Select the Solid fill radio button.
6. Confirm the Fill color selections appear in the dialog under the radio buttons and checkbox.
7. Select a new color from the Color button that will open a color palette.
8. Navigate to and activate the Close button.
9. Confirm the color of the slice or bar has changed.
10. Repeat the above steps for each piece where the color needs to be updated.

Links

The term “link” is short for hyperlink. Links are interactive features that allow users to navigate to other slides or to websites outside the PowerPoint slide deck. They can be activated with the mouse or keyboard. Typically authors insert links in order to provide more information on a topic. Links commonly appear in one of three formats - linked text (i.e. “Department of Veterans Affairs”), a raw URL (i.e. “http://www.va.gov”) or as an image link where an image is used instead of text (i.e. “  ”).

Meaningful Link Text

Providing meaningful link text is important when creating links. The text needs to describe the content behind the link or the action that will occur by activating the link. Generic terms – such as “click here” or “read more” – do not provide adequate information on where the link will lead the user. For individuals using a mouse, hovering over a link displays the link target and clicking it takes the user to an exact target. A method must be provided that allows assistive technology (AT) or keyboard only users to access the target information.

Example Link Text

Poor Example

To find your local VA hospital or clinic, click here.

Good Example

Find your local VA hospital or clinic on our website.

Accessible Links

Generally when a link is added to a presentation the link is given a different color than the text. Visually the color distinction allows users to understand that they should explore this text to see if they can act upon it. Users of assistive technology need the links to be labeled as “link” when they are inserted so that users know they can interact with the item. The label of link is provided by default when the hyperlink tools on the toolbar are used. When links are properly added to slides, users will be able to tab to the links and activate them with the keyboard, in addition to clicking them with a mouse.

Note: Some ATs may not instruct the user that some content is an actionable link, therefore it is important to provide the raw URL somewhere in the presentation. This information can either be on the slide itself, on an appendix slide at the end of the deck, or in the notes section of the slide the link references. If the notes section is utilized, meaningful text needs to be added so that the user knows where the URL leads.

Action Buttons

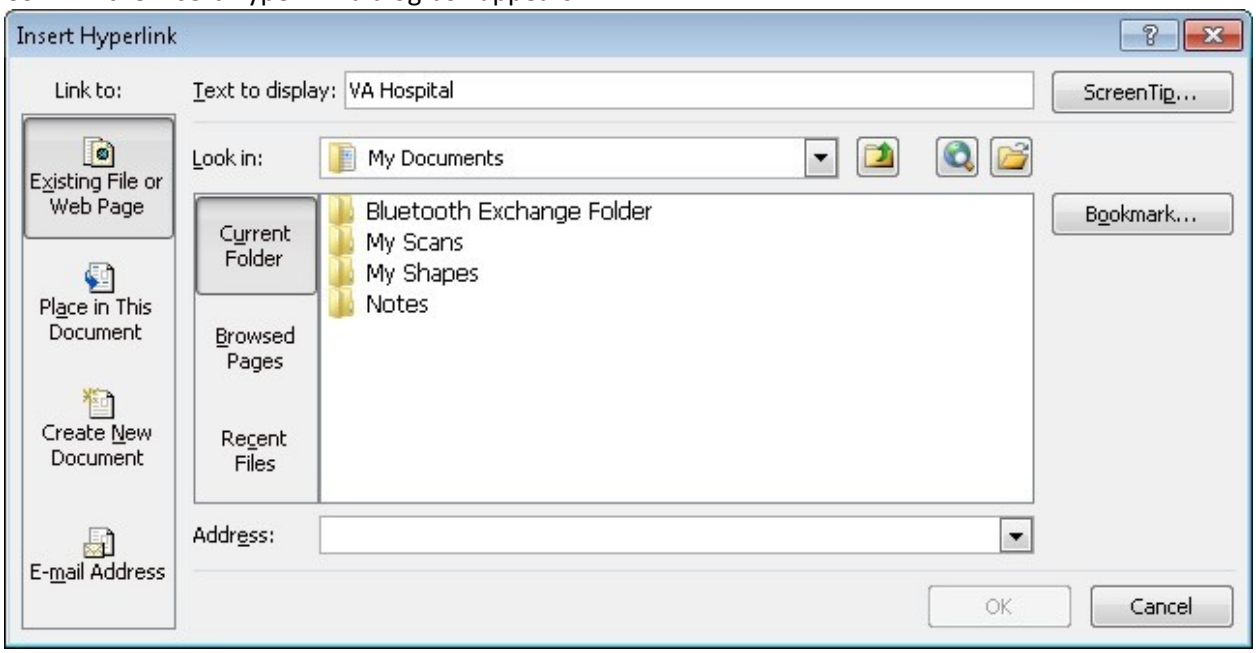
Action buttons are built-in button shapes that can be set as a link to another slide, play a sound, or perform some other action. When the button is clicked or the mouse is hovered over the button, the

selected action will occur. It is advised to avoid using items such as action buttons and other shapes as links since they are not recognized by assistive technology, The user will not know the link exists.

Creating Links

1. Navigate to the toolbar and activate the Insert tab.
2. Locate the Links pane.

3. Select the Hyperlink button.
4. Confirm the Insert Hyperlink dialog box appears.



5. Select the Existing File or Web Page option from the Link to section to create an external link to a webpage.
6. Insert descriptive text that will become the link text in the Text to display field.
7. Enter the URL in the Address field of where the link should lead.
8. Navigate to and activate the OK button.
9. Verify a link has been created on the slide.

Important: A hyperlink can also be created using the Action Settings dialog that appears after activating the Action button from the links group. It is imperative though that the actions created are on the "Mouse Click" tab and not the "Mouse Over" tab. This will allow the link to also be accessible via the keyboard.

Lists

Lists are typically used to group related information. Sometimes items in lists are provided in a particular order, such as steps for assembling a product. These are called ordered lists. In other instances, lists are designed to be more loosely related groups of items, such as a shopping list for the grocery store. These are called unordered lists.

Ordered lists typically use numbers or letters to organize the content. Unordered lists generally use bullets, symbols or pictures. Bullets should be used for lists that do not have a chronological order. Numbered lists should be used when a step-by-step process needs to be followed.

The list feature in PowerPoint must be used to create lists and sub-lists. It is important to use the list style option in the toolbar so users of assistive technology (AT) will be able to know when a list is present, and to recognize the relationship between items in the list. When this feature is not used, there is no structural indication to allow assistive technology to detect that items are grouped and related. For the same reason, avoid using blank spaces to create the visual appearance of a list, because AT will not be able to identify a grouping of text and blank spaces as a list.

When sub-lists are not properly styled, users of assistive technology may not be able to recognize that some items are indented to indicate their relationship to other items in the list. When sub-lists are structured correctly, level, position, and other contextual information are indicated by the assistive technology to the user. Select a different character for each list level. The change in characters will allow users to understand the relationship of items in the list. Additionally, it is better to use the few bullet or number styles that are available by default so that assistive technologies will recognize the characters. There are some character sets, such as Wing Dings, that assistive technology cannot interpret correctly to the user.

Examples

Bullet List

- Apples
- Pears
- Oranges
- Pineapple

Numbered List

1. Take out a mixing bowl
2. Add 1 cup flour
3. Add 2 tablespoons butter
4. Add 2 eggs

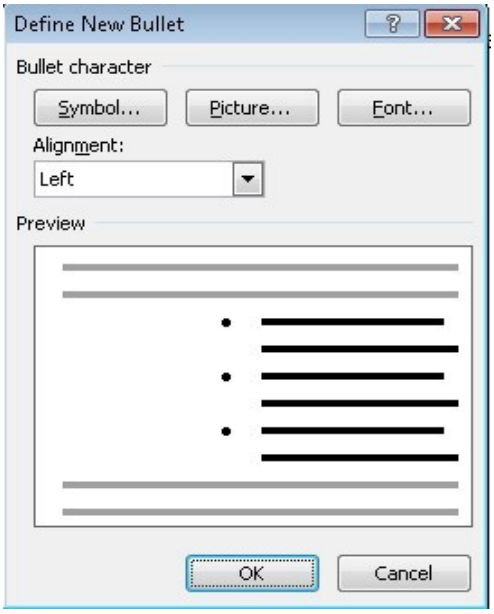
Sub-list

1. Assistive Technology
   - Screen Reading Software
     - JAWS
     - Window-Eyes
     - NVDA
   - Screen Magnification
     - MAGic
     - ZoomText
     - Microsoft Magnifier

Adding or Updating Lists

1. Locate the desired text or placement for a list
   a. Select the text to be structured as a list; or,
   b. Place the cursor at the desired location to start a new list
2. Locate and select the Home tab
3. Navigate to the Paragraph section on the ribbon

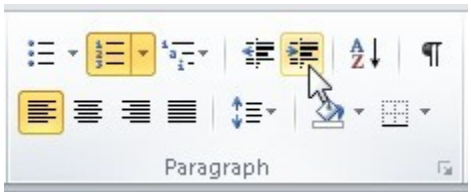
4. Select Bullets or Numbering; or,
5. Select the small arrow and select Define New Bullet or Define New Number Format to change the appearance of the bullet
   a. Confirm the Define New Bullet or Define New Number Format dialog appears.



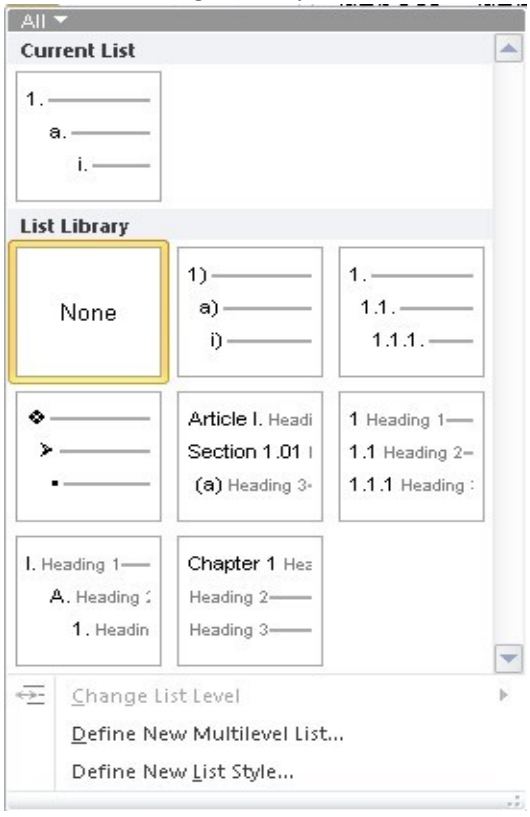
   b. Make desired changes and then navigate to and activate the OK button.

Adding or Updating Sub-Lists

1. Locate the desired text or placement for a sub-list
    a. Select the text to be structured as a sub-list; or,
    b. Place the cursor at the desired location to start a new sub-list
2. Locate and select the Home tab
3. Navigate to the Paragraph section on the ribbon
4. Select the Increase Indent button



Note: Open the drop-down list on the Numbering or Bullets button and select a Numbering or bullet scheme to change the style or to create a bulleted sub-list inside a numbered list.



Tables

Tables are used to organize and display associated information in a structural manner. Think of a grid to visualize how a table appears. There usually are horizontal and vertical lines that intersect to create individual cells. When reading data from left to right, the user is reading the contents of a row. When reading information from top to bottom, the user is reading information in a column. The combination of rows and columns define a table.

Many types of data are placed in tables. Tables can show the progression of data through years or other ranges, such as a graph. They can show the relationship between information, such as an organizational structure, or they can help to categorize data such as the qualifications of a junior and senior level position. There are two types of tables – layout tables and data tables. Layout tables are primarily used to control the visual appearance of content, such as position and alignment. Layout tables do not serve a purpose in PowerPoint due to the intended use of the software; therefore, layout tables should be avoided in PowerPoint. For concerns about the order and correlation of content, refer to the Reading Order tutorial.

Data tables can be simple or complex. Simple data tables have a one column header to one row header ratio for each data cell. Complex data tables have two or more levels of row and/or column headers that must be associated with each data cell to make sense.

Table Type Examples

Layout Table: Unrelated items laid out in cells of the table

Groceries	Toiletries
Clothes	Tools

Simple Data Table: The two data cells each have one associated column and row header

Header - Position Hourly Totals	Column Header - Programmer	Column Header - Designer
Row Header - Technical Team	40 hrs/week	40 hrs/week

Complex Data Table Example: Each data cell has two associated column headers and one row header

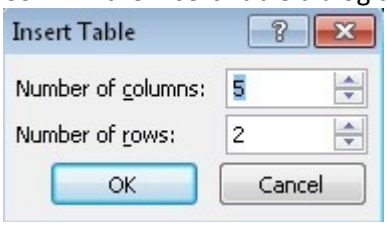
Header 1 - Same positions at different companies	Column Header 1 - Company X	Column Header 1 - Company Y
Header 2 - Technical Team	Column Header 2 - Programmer	Column Header 2 - Designer
Row Header - Analyst	40 hrs/week	40 hrs/week
Row Header - Team Lead	45 hrs/week	45 hrs/week

Data tables must be created using the table feature of PowerPoint. When data tables are not created using this method, users of Assistive Technology will not have access to information such as the number of rows and columns or the fact that data is in a table. Unlike HTML, there is no way to associate header and data cells; however, it is important that header cells provide descriptive text for each column or row header and data appear in appropriate cells.

Adding Tables

1. Navigate to the toolbar and select the Insert tab.
2. Locate the Tables pane.
3. Select the Table button

4. Select Insert Table from the menu options.
5. Confirm the Insert Table dialog appears.



6. Enter the number of desired columns and rows in the appropriate fields.
7. Navigate to and activate the OK button.
8. Confirm an empty table appears on the slide.

Table Structure

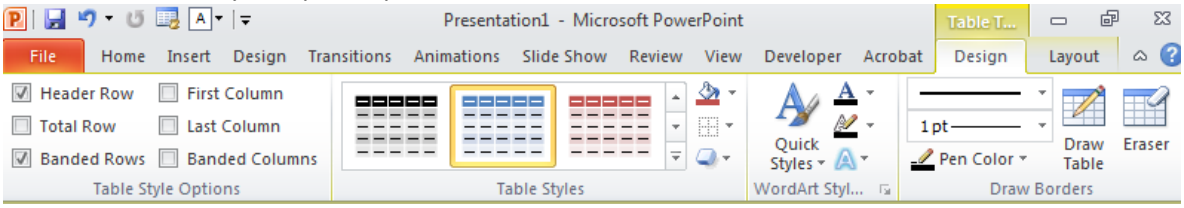
Data tables should be formatted utilizing PowerPoint data table structure methods to show relationships between header cells and data cells. A header cell is the title of the row or column. A data cell is the meaningful content related to the header cell. Each distinct header and data point within a table needs to be placed in its own table cell. The Enter key creates a new line within the same cell. However, if the cursor is positioned in the last cell of a row the tab key will create another row. The Insert row or column feature available from the Layout tab in the Rows & Columns group needs to be used to correctly position cells within a table.

When multiple headers or data points are placed in the same cell, assistive technology cannot properly determine the header and data relationship between cells. Additionally, when contents are placed in the same cell, users of screen reading technology are not able to navigate through the table's cells correctly and will be unable to determine context, such as position within a row.

Designating Content as a Table Header

Though current assistive technologies do not recognize all options available in PowerPoint, it is a good idea to structure content as much as possible. As technology advances, more properties will be recognized and some of the options will help to reduce the amount of remediation needed when a document is converted to another format. PowerPoint allows the option to designate content in tables as a header row.

1. Place the insertion point in a table cell within the desired header row.
2. Navigate to and activate the Design tab on the toolbar.
3. Locate the Table Styles Options pane.



4. Ensure the Header Row checkbox is checked if using row headers.
5. Check other checkboxes that apply.

Empty Data Cells

Empty cells can be misinterpreted or improperly conveyed by some assistive technologies because they have trouble determining the purpose of an empty table cell. If a data table row or column is blank, it is

usually set that way for visual formatting purposes (i.e. to make a thick, bold border between rows). Blank cells can make it difficult for users of assistive technology to determine the total number of rows and columns in the table and the position within the table that the user has navigated to. The desired visual formatting needs to be applied with table border options.

Table Summaries

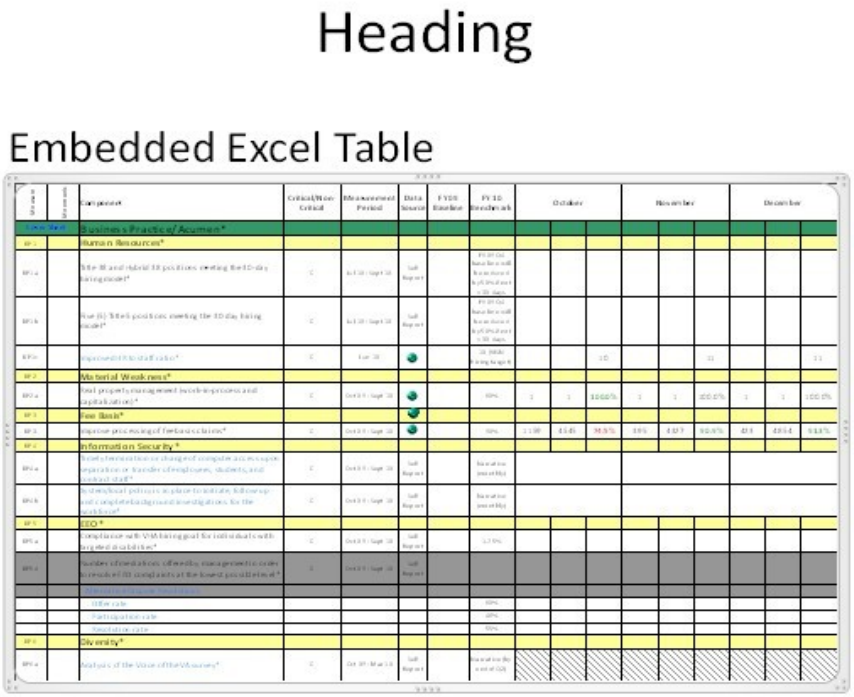
Table summaries can be helpful in describing the purpose of a table. A summary of the table can be a description in surrounding text or near the table. It benefits the user to have a brief description to identify the purpose of the table.

Embedded Tables

Embedded contents in a PowerPoint presentation are not accessible to users of Assistive Technology. They should not be used. For example, an embedded Excel file with a table will not be keyboard accessible to users of screen reading software. Only the file name and type will be announced. The user will not be able to open the file using the keyboard or access the table cells. If embedding content is unavoidable, instructions need to be provided to the user on how they can access the original source file. Refer to the Embedded Objects tutorial for more information.

Example of Embedded File on a Slide

Example of Embedded Excel Table on a Slide



Animation

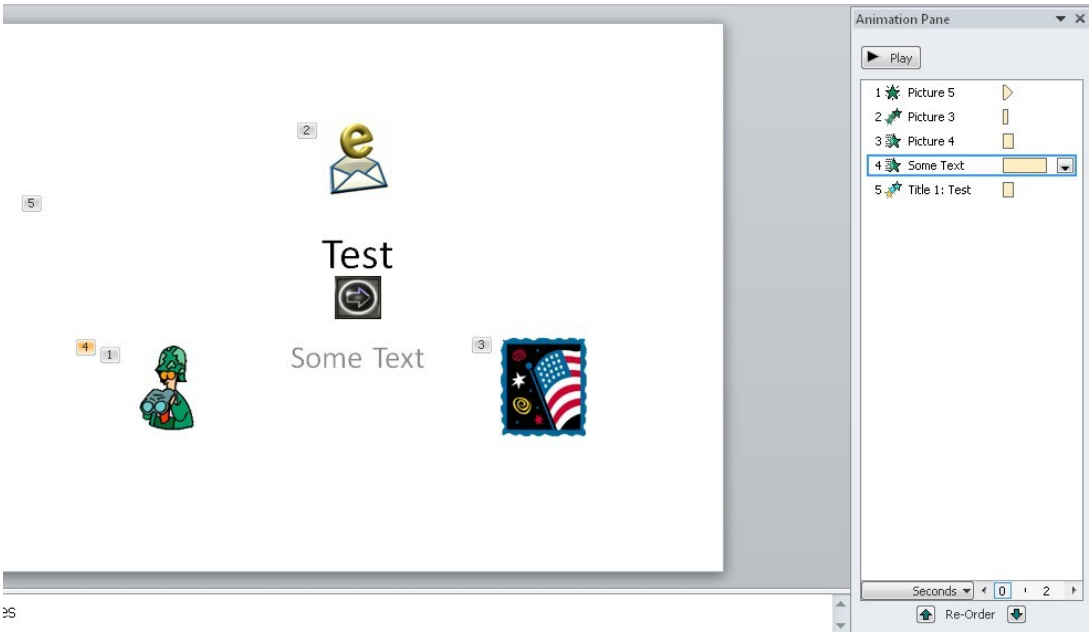
Animations and sounds are used on PowerPoint slides to add visual effects and create a lively presentation. Animations can also be used to provide interaction by adding quizzes using buttons and checkboxes. When animations that provide meaningful content are utilized in a presentation, they must be made accessible or an equivalent alternative must be provided. This tutorial reviews ways to make animated content accessible.

Using the Animation Pane

The Animation Pane is very useful in many ways. It provides information on the effect option selected for each individual animation, the order of content, the duration of each animation and the option selected to start the animation. By default the on-click option is selected and is the most accessible since the mouse or the keyboard can be used to play the animation. Pressing the play button above the objects shows a preview of the animation without going into slide show view of the presentation.

To view the Animation Pane:

1. Navigate to the toolbar and activate the Animations tab.
2. Locate the Advanced Animation pane.
3. Select Animation Pane button.



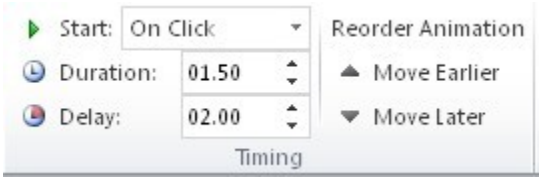
Transition

Transition animation is text that fades in, flies in, or appears in pieces. Animations that flash or blink too fast can cause distraction or, even worse, seizures in some people with disabilities. Blinking or flashing objects and images should flash less than three (3) times in one (1) second. To test the flash rate of an animation set a timer and count the number of times it flashes in thirty (30) seconds and divide that number by ten (10). It is also important that animated content fully appears within five (5) seconds so that assistive technology does not start interpreting screen content prior to the animation settling.

Screen content that is shown after a specified time may not be available to users of assistive technology due to the lapse in time. Some assistive technology, such as screen readers, will attempt to read the content that it believes is on the slide when it is loaded. If some content does not appear for a length of time the assistive technology will not recognize its presence. Another option is to provide the user with instructions to disable the transitioning animation before the presentation.

Adjust Slide Transition Speed:

1. Select the text or object the animation will be applied to.
2. Navigate to the toolbar and activate the Animations tab.
3. Locate the Advanced Animation pane.
4. Select the Add Animation button.
5. Select an animation effect such as Entrance, Exit or Emphasis.
6. Locate the Timing pane.



7. Under the Duration field, enter the length of the animation.
8. Under the Delay field, enter a specified time less than 5 seconds to play the animation.
9. Activate the Play button in the Animation pane to confirm the proper effect and timing were applied.

Animation Timing

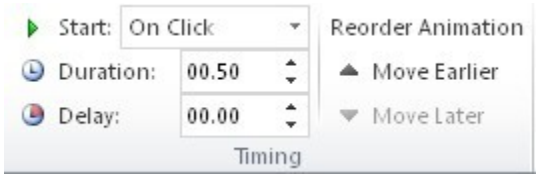
Options exist for how animations are presented. Depending on the option selected, content is displayed on the slide using the mouse or keyboard, automatically or by clicking text. The option to set a specific trigger on an object to start an animation should be avoided; For example, setting the animation to start after the user clicks a shape or text with the mouse. The user should be provided with the option to advance through each animation with a click of the mouse or the keyboard instead of automatically showing the animation. The “on-click” option (selected by default) is available on the Timing pane and should not be confused with the Trigger button which can be viewed on the Advanced Animation pane.

Often times even when “on-click” events are used, assistive technologies such as screen readers have difficulty accessing the content. Additionally, animated content is challenging for many disability types (such as low vision users) because of how it can be used. When content can appear from any direction, it may be difficult for some users to track what is on the screen. An accessible alternative must be provided if the animation cannot be made accessible.

Adding On Click to Animation Timing:

1. Verify Animation Effects such as Entrance, Exit or Emphasis have been added to text or objects.
2. Navigate to the toolbar and activate the Animations tab.
3. Locate the Timing pane.

4. Select “On Click” from the list next to “Start”.



Interactive Animation

Quizzes and forms are very useful and make a PowerPoint presentation more interactive, but they are not accessible. The controls available through the Developer tab such as option button, checkbox, scroll bar, and combo box cannot be used with the keyboard when assistive technology is running and should be avoided.

It is recommended that HTML and PDF formats be used to create forms because they reliably produce accessible forms. If it is absolutely necessary to add a form in PowerPoint, adhere to the following steps.

Audio Equivalent

If audio is included with an animation, provide a text equivalent in a separate file or described within the slide so it can be accessible to users who are deaf or hard of hearing. Important information that is described in the audio - for example, statistics or contact information - that is not visible on the slide will get missed. The controls available in PowerPoint to play and stop audio content are not keyboard accessible when assistive technology such as screen reading technology is active. It is important that any meaningful content presented visually is also described in the audio so that a user with low or no vision can understand the content.

Example Audio and Video track

Horses can run shortly after they are born and can gallop at a speed of around 44 kph (27 mph). The fastest recorded sprinting speed of a horse was 88 kph (55 mph).
* Video portion shows horses running across a beach.
At the end of the video Credits are provided to Jone Joe
jane.joe@email.com (555) 234-6543
www.somewebsite.com

Non-Animated Equivalent

One method of breaking up an animation is to provide the animated content in steps that can be reviewed one at a time; using different slides to view the animation works best. Copy the slide into several additional slides and then change the objects on each slide to represent a step of the process being demonstrated. Set the slides to advance on click and not automatically.

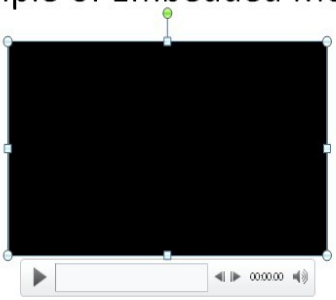
Note: When copying and pasting objects to a slide use a blank layout and verify placeholders are not present or use the built-in placeholders to add tables, charts, picture and other content.

Embedded Objects

Embedding media and objects (i.e., spreadsheets, graphs or media) into a PowerPoint presentation combines information from different file types into one file. It allows the user to quickly and easily open the embedded file without the hassle of saving multiple documents on the computer. The goal of embedding content is generally to distribute a document that is permanent but contains embedded content that can be updated without affecting the original document. Unfortunately, embedded content cannot be accessed by keyboard-only or assistive technology (AT) users. It is recommended that content not be embedded directly into a slide.

Below are examples of how embedded content commonly appear in a slide. Embedding a video will display the actual source of the video, for example Flash or Multimedia. A file can be embedded as an icon which represents the file with a shortcut followed by the file name of the document or as an object displaying the content of the inserted file in the slide. The items below are not accessible because a user of assistive technology cannot navigate to and activate the controls for the video or open the link for the spreadsheet via the keyboard.

Example of Embedded Media



Example of Embedded Icon

Example of Embedded File

CATEGORIS	AMOUNT	PERCENTAGE
Category 1	20	20%
Category 2	30	30%
Category 3	10	10%
Category 4	40	40%
Total	100	100%

If it is necessary to embed content such as documents, charts, images or electronic media files, note the following suggestions:

- Be sure alternate text is applied to the embedded object to appropriately describe the embedded file. A meaningful and concise description of the file as well as the type of file needs to be provided.
    - Example: A description of an embedded Excel file may say “Excel file showing how many patients are receiving care in each unit at the VA Medical Center. Visit http://www.va.gov/ to download the Excel file”. For more information about applying alternate text, see the Image tutorial.
- In addition to being embedded, the content must be provided in a separate file or via website link.
    - Example: Link to website so users can obtain more information on a particular subject. The raw link should be provided in the slide along with the Notes section.
    - Example: A structured table representing the information from an Excel spreadsheet.
- Embedded audio and/or video require text equivalents to be associated with the embedded file.
    - Example: If an audio file is embedded in a slide, the presentation author needs to provide a transcript or captioning of the audio. Additionally, if the content is a video with audio, synchronized captions must be provided. All meaningful video content needs to be described in the audio.

Conversion Tips

This tutorial focuses on converting to PDF and Flash formats. Converting Microsoft PowerPoint slides to other formats can offer benefits. PDF and Flash content preserve the original formatting and maintain integrity of content because they cannot be directly edited. The file size is more compact without losing quality. In contrast to PowerPoint format, PDFs and Flash can be used on various platforms with different web-browsers. In most cases the formatting, fonts and images will carry over to the new format. For information on creating accessible PDFs and Flash content, review the resources available on the VHA Section 508 office website.

Before converting to any format from PowerPoint it is important to take as many steps as possible in PowerPoint to make the content accessible. Below is a short list of concepts that need attention when creating presentations. Refer to the other tutorials in this series for more detail on the following tips.

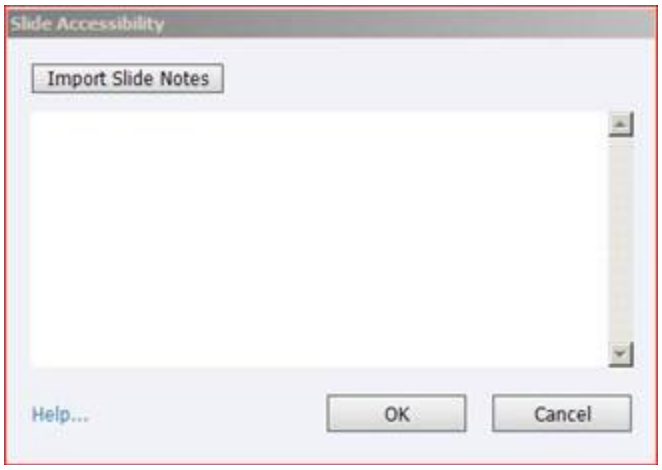
- Graphics – Images and graphics need meaningful, concise descriptions.
- Reading Order – The order of objects on the slide (the Z-order) must be logical and intuitive.
- Layered Objects - Avoid layering objects where possible because some items may not come through the conversion process and/or an incorrect reading order may occur.
- Color Contrast – Check the color contrast of text and images of text in PowerPoint. Colors are much easier to change while in PowerPoint than after conversion.
- Animations – Limit animations and transitions. They require extra steps for accessibility and sometimes will not work as intended once converted to another format.
- Proper Structure – Ensure that where lists are used the list feature is utilized in PowerPoint. Also, note that for Flash, in order to convert multi-column content properly, it is best to use multiple text boxes instead of the column feature in PowerPoint.

Conversion to Flash

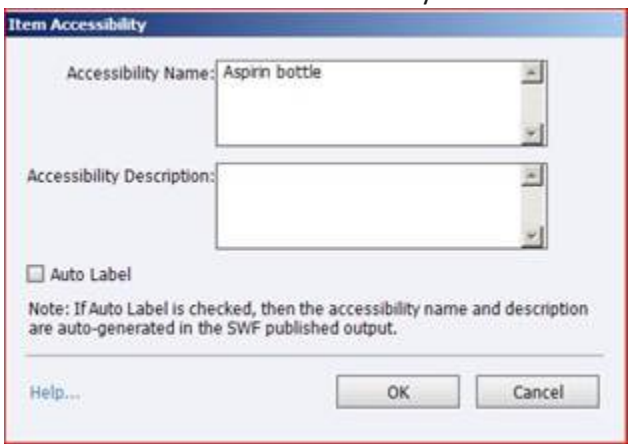
Captivate, Presenter and Articulate are all popular products used to convert PowerPoint presentations to flash. Presenter and Articulate rely heavily on the structure provided in PowerPoint. Also, each of these programs has limited features that allow adjustments for accessibility. That is why it is imperative that content is structured properly in PowerPoint before it is converted. The list below contains concepts for all content converted to Flash; however, many of the functions discussed are only available in Captivate.

- All audio content must include captions. While Captivate has a good captioning tool for the author to use, other content publishers may require outside tools to create the captioning.
- When it is not possible to select an individual object in the editable area of the application to apply a specific accessible name to that one item, the Slide Accessibility panel can be used to apply an accessible description of all content on the slide. Remember, it is best to apply

accessible names to each individual item where feasible.

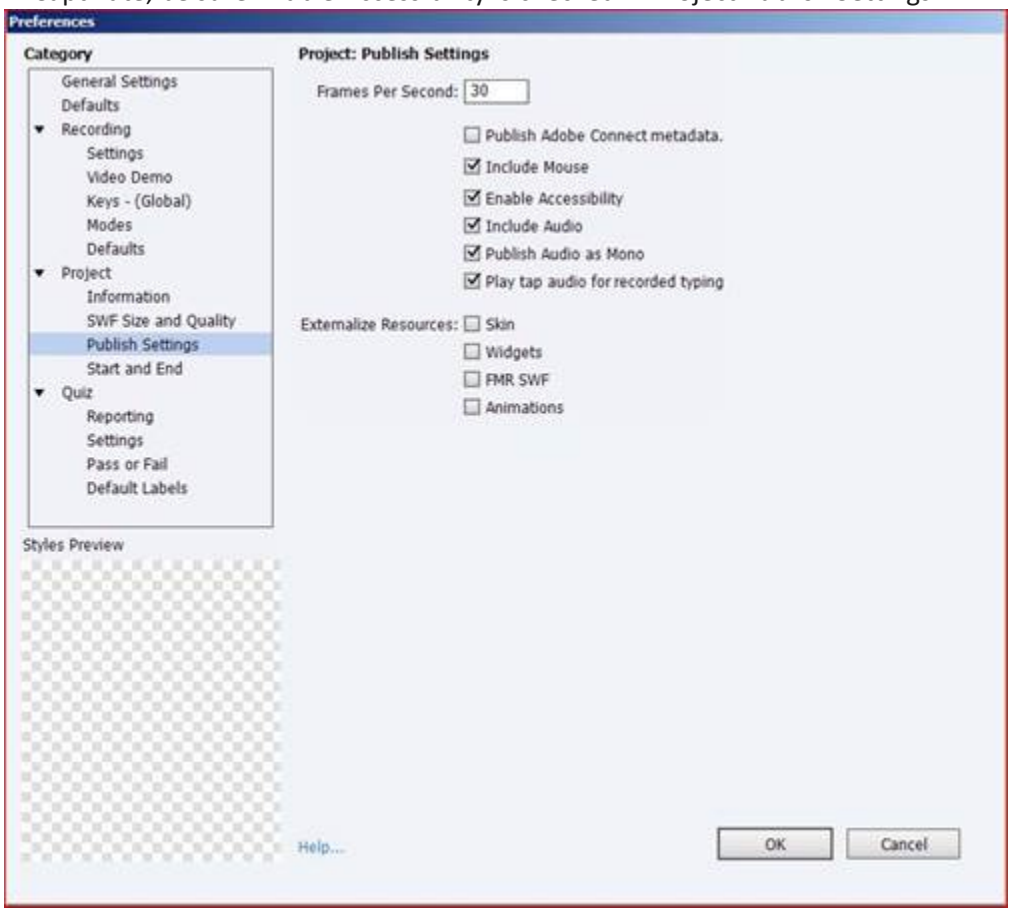


- Ensure any object that can receive a focus rectangle is accessible with either dynamic text or through the accessibility properties. It is important to note that Click Boxes must be made accessible as well. In Captivate's Accessibility Panel, at a minimum, an accessible name must be given to each item. It is imperative that the Auto Label checkbox in this dialog is unchecked as this feature creates names that may not be intuitive or applicable



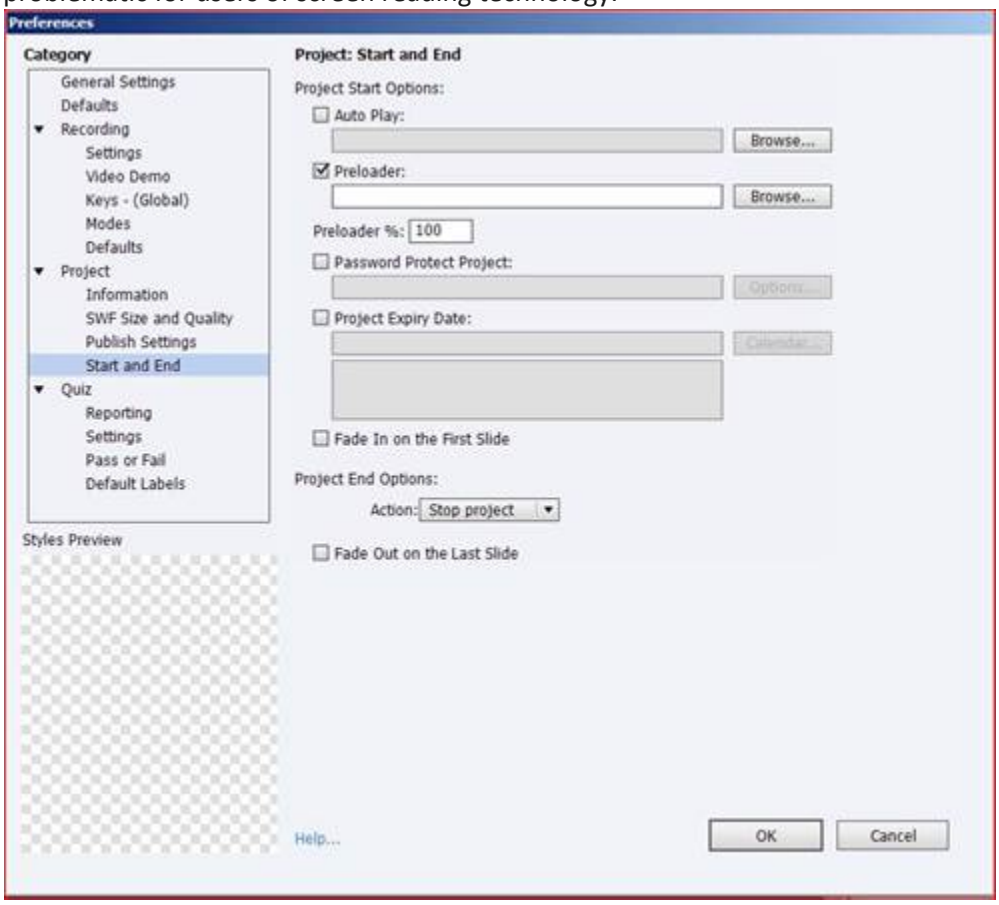
- Reading order issues often cannot be fixed in Flash publishers. Some reading order issues caused by interactive content can be avoided by ensuring the resulting object(s) are visually after and below the object that activated or caused it.

- In Captivate, be sure Enable Accessibility is checked in Project Publish Settings



- For Captivate, when including audio, the Auto Play option must be unchecked in the Project Start and End publish settings. Audio that plays automatically can be disorienting and

problematic for users of screen reading technology.



- All Playbar controls for audio must provide full user control. The user needs to be able to play, stop, pause, and perform any other functions that a mouse user can perform by keyboard.

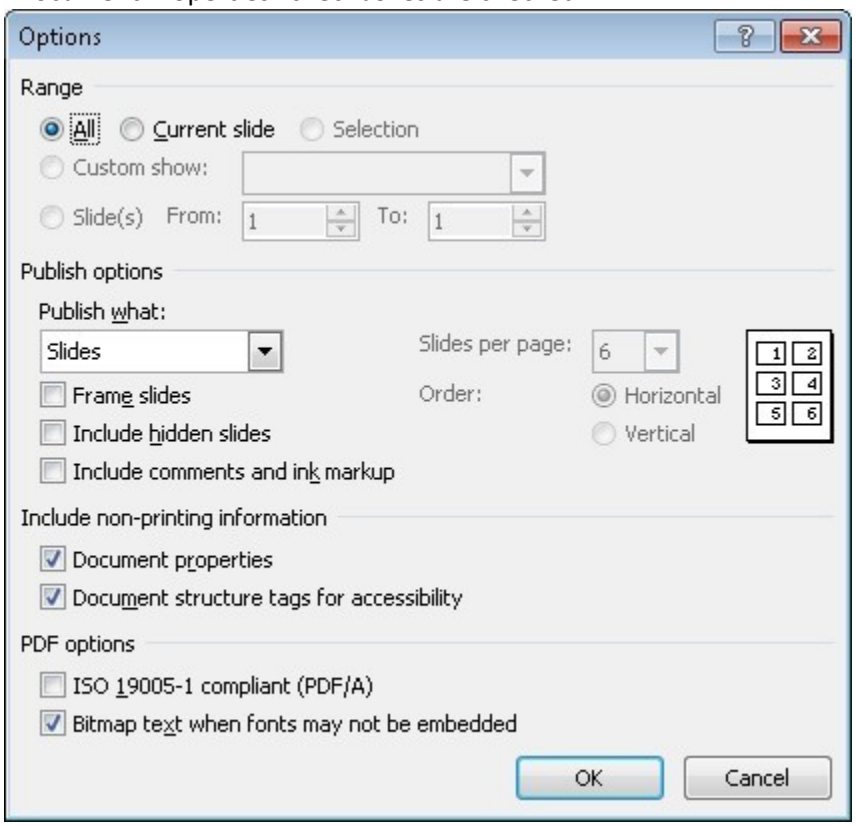
For additional information about Flash publishers review pages 6 and 7 of the 508 X-Press Newsletter, Fall 2012 [Opens PDF] and the Creating Accessible Flash Course.

Conversion to PDF

PDF content will always require some manual remediation in a PDF authoring tool such as Adobe Acrobat Professional. Less remediation will need to take place though if proper structure is used to create the source document, in this case a PowerPoint presentation. At the very minimum a PDF needs to be tagged so that assistive technology can access its contents. Below are steps for how to prepare a PowerPoint presentation for conversion to PDF.

1. Navigate to File on the toolbar and select Save & Send.
2. Locate File Types, select Create PDF/XPS Document and activate the button.
3. In the Publish As dialog navigate to and activate the Options button.

4. When the Options dialog appears ensure the “Document structure tags for accessibility” and “Document Properties” checkboxes are checked.



For additional information on PDF accessibility, visit the Creating Accessible PDFs course.